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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/716,653	11/20/2000	Eric R. Alling	50807	8386

53884 7590 04/16/2007
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EXAMINER

FERNANDEZ RIVAS, OMAR F

ART UNIT	PAPER NUMBER
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2129

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/716,653

Applicant(s)

ALLING ET AL.

Examiner

Omar F. Fernández Rivas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is in response to an RCE entered January 26, 2007.
2. The Office Actions of October 28, 2006, March 2, 2006, March 29, 2004 and November 25, 2003 are fully incorporated into this Non-Final Office Action by reference.

Status of Claims

3. Claims 1-14 have been canceled. Claims 15, 16, 28, 29, 34 and 35 have been amended. Claims 15-36 are pending on this application.

Information Disclosure Statement

4. The information disclosure statement has not been filed for this application. To comply with 37 CFR 1.98(a)(1), the following is required: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement.

Claim Objections

5. Claim 35 is objected to because of the following informalities: lines 6-7 recite: "...queries being determining a type of defect,..." The claim should read: "...queries determining a type of defect,..." Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 15, 28 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite: "receiving a reply to the query, the reply including one of the potential responses or a request to view all of the resolution points in the decision tree". The metes and bound of this limitation cannot be established from the claim language used. It is not clear if this limitation means that the reply can include either one of the potential responses or a request to view all of the resolution points or if it means that the steps of receiving a reply and a request to view all of the resolution points are optional. For purposes of examination, the Examiner will consider the claim limitation to mean that the reply can include either one of the potential responses or a request to view all of the resolution points.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 15-25 and 28-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Skaaning et al (US Patent #6,535,865, referred to as **Skaaning**).

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Claim 15, 28 and 34

Skaaning anticipates a system for diagnosing a fault (**Skaaning**: abstract, L1-2, C5, L32-33; a troubleshooter is a system for diagnosing faults or problems in a system) the system comprising:

a knowledge base including a plurality of fault diagnoses and fault symptom queries, wherein each said fault symptom query includes potential responses and images that correspond to the potential responses (**Skaaning**: C6, L1-9; C8, L1-25; C8, L66-67, C9 L1-16; C35, L9-12; C43, claims 1 and 2; Figs. 1,2 and 4; the information stored on each node is a knowledge base with information on their respective functions (indicator node, cause node or troubleshooting node). The pictures presented to the user must be related to the suggestions or responses given by the troubleshooter so that the user can make his selection);

a decision tree module including a decision tree having a plurality of decision points each corresponding to one of the fault symptom queries and a plurality of resolution points each corresponding to one of the fault diagnoses, wherein each said potential response in the decision tree indicates one of the decision points or one of the resolution points and one of said decision points is identified as a starting decision point (**Skaaning**: C5, L5-24; C8, L1-16; C25, L23-67, C26 L1-2; Figs. 1,5,8,9,10A-10E and 11; a Bayesian network is a decision tree module, decision points are nodes in the Bayesian network, queries are the questions made on each troubleshooting step and resolution points are the suggested actions to solve the problem which are stored in nodes in the network);

a user interface module in communication with said decision tree module, said knowledge base and a user access device (**Skaaning**: C8, L1-22; Figs. 1 and 2; a video display is a user interface module and the customer PC is a user access device), said user interface module including instructions to implement a method comprising:

designating the starting decision point as the next decision point (**Skaaning**: C25, L1-67, C26, L1-2; C33: 19-67, C34 L1-2; Figs. 6-9, 10A-10E and 11; designating the starting decision point as the next decision point is performed by the interactions between the arcs of the net when the tree is being searched to find a solution to the problem);

transmitting the fault symptom query corresponding to the next decision point to the user access device (**Skaaning**: C8, L1-16, C8, L26-31; Fig. 3, Fig. 12; providing suggestions to the user is transmitting fault symptoms queries corresponding to each decision point);

receiving a reply to the query, the reply including one of the potential responses or a request to view all of the resolution points in the decision tree (**Skaaning**: C35, L5-36; Fig. 12; a reply is the suggestion made by the troubleshooter. Since this limitation is written in the alternative, only one of the alternatives needs to be considered when applying prior art);

in response to the reply including one of the potential responses:

continuing said transmitting the fault symptom query and receiving a reply until said one of the potential responses indicates one of the resolution points, wherein if said one of the potential responses indicates one of the decision points then said one of the

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decision points is designated as the next decision point (**Skaaning**: C35, L5-36; Fig. 12; the process iterates until a solution is found. Asking questions designate another decision point); and

transmitting the fault diagnosis corresponding to said one of the resolution points to the user access device (**Skaaning**: C8, L1-16; Fig. 1; the user's PC is the user access device); and

in response to the reply including a request to view all of the resolution points:

transmitting diagnostic images associated with each of the resolution points in the decision tree to the user access device, thereby allowing a user to diagnose a fault without having to respond to queries for traversing the decision tree (These limitations are not considered since only one of the alternatives needs to be considered when applying prior art).

Claim 16 and 29

Skaaning anticipates the fault diagnoses include one or more diagnostic images (**Skaaning**: C6, L1-9; C35, L9-12; illustrations of the problems are diagnostic images).

Claim 17 and 30

Skaaning anticipates the fault diagnoses include a description of the fault (**Skaaning**: C27, L34-67; C28, L1-49; Figs. 7-8; the suggestions provide a description of the fault).

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Claims 18 and 31

Skaaning anticipates the fault diagnoses include a likely cause of the fault (Skaaning: C5, L5-16; C8, L1-16; C27, L34-67, C28, L1-49; the suggestions present a likely cause of the fault).

Claims 19 and 32

Skaaning anticipates the fault diagnoses include recommended remedial actions (Skaaning: C5, L5-16; C8, L1-16; C8, 26-31).

Claim 20

Skaaning anticipates a user accessing the user access device is a customer (Skaaning: C8, L32-34).

Claim 21

Skaaning anticipates a user accessing the user access device is a customer support representative (Skaaning: C6, L22-40; if control is given to the experienced support agent, he is accessing the user access device).

Claim 22

Skaaning anticipates the fault relates to a technical product (Skaaning: Abstract, L1-2; C5, L32-33; a printer is a technical product).

Claim 23

Skaaning anticipates the fault relates to a technical service (Skaaning: C8, L32-56; a malfunction in a printer system is a fault in a technical service).

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Claim 24

Skaaning anticipates the user access device is a personal computer (**Skaaning**: C8, L1-16, Fig. 1).

Claim 25

Skaaning anticipates the communication between the user interface module and the user access device is via the Internet (**Skaaning**: C8, L1-16, Fig. 1).

Claim 33

Skaaning anticipates the fault relates to a technical product or technical service (**Skaaning**: Abstract, L1-2; C5, L32-33; C8, L32-56).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26-27 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skaaning et al in view of Buenzli, Jr. et al (US Patent #6,535,865, referred to as **Skaaning**; US Patent #5,157,668, referred to as **Buenzli**).

Claim 26

Skaaning does not teach the fault is a defective circuit board.

Buenzli teaches the fault is a defective circuit board (**Buenzli**: abstract, L1-4, L15-17; C23, L35-37; an electronic circuit or unit is considered to be a circuit board).

It would have been obvious to one of ordinary skill in the arts at the time of the applicant's invention to modify the teachings of Skaaning by detecting a fault in a defective circuit board as taught by Buenzli for the purpose of determining if a component in the circuit board can be replaced to solve the problem or if the entire board should be replaced.

Claim 27

Skaaning does not teach the fault symptom query is directed to a determination of what type of defect the defective circuit board contains.

Buenzli teaches the fault symptom query is directed to a determination of what type of defect the defective circuit board contains (**Buenzli**: abstract, L15-17).

It would have been obvious to one of ordinary skill in the arts at the time of the applicant's invention to modify the teachings of Skaaning by making the fault symptom query directed to a determination of what type of defect the defective circuit board contains as taught by Buenzli for the purpose of determining what component in the circuit board is producing the fault so that it can be replaced.

Claim 35

Skaaning teaches a knowledge base including a plurality of fault diagnoses and fault symptom queries wherein said fault diagnoses include diagnostic images, a description of the fault, and a likely cause of the fault (**Skaaning**: C6, L1-9; C8, L1-25; C8, L66-67, C9 L1-16; C35, L9-12; C43, claims 1 and 2; Figs. 1,2 and 4; the information stored on each node is a knowledge base with information on their respective functions (indicator node, cause node or troubleshooting node). The pictures presented to the

user must be related to the suggestions or responses given by the troubleshooter so that the user can make his selection. The suggestion provides a description and a likely cause of the fault).

A decision tree module including a decision tree having a plurality of decision points each corresponding to one of the fault symptom queries and a plurality of resolution points each corresponding to one of the fault diagnoses, wherein each said potential response in the decision tree indicates one of the decision points or one of the resolution points and one of said decision points is identified as a starting decision point (**Skaaning**: C5, L5-24; C8, L1-16; C25, L23-67, C26 L1-2; Figs. 1,5,8,9,10A-10E and 11; a Bayesian network is a decision tree module, decision points are nodes in the Bayesian network, queries are the questions made on each troubleshooting step and resolution points are the suggested actions to solve the problem which are stored in nodes in the network);

a user interface module for providing customer support, said user interface module being in communication with said decision tree module, said knowledge base and a user access device (**Skaaning**: C8, L1-22; Figs. 1 and 2; a video display is a user interface module and the customer PC is a user access device), said user interface module including instructions to implement a method Comprising:

designating the starting decision point as the next decision point (**Skaaning**: C25, L1-67, C26, L1-2; C33: 19-67, C34 L1-2; Figs. 6-9, 10A-10E and 11; designating the starting decision point as the next decision point is performed by the interactions

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between the arcs of the net when the tree is being searched to find a solution to the problem);

transmitting the fault symptom query corresponding to the next decision point to the user access device (**Skaaning**: C8, L1-16, C8, L26-31; Fig. 3, Fig. 12; providing suggestions to the user is transmitting fault symptoms queries corresponding to each decision point)

receiving a reply to the query, the reply including one of the potential responses or a request to view all of the resolution points in the decision tree(**Skaaning**: C35, L5-36; Fig. 12; a reply is the suggestion made by the troubleshooter. Since this limitation is written in the alternative, only one of the alternatives needs to be considered when applying prior art);

in response to the reply including one of the potential responses:

continuing said transmitting the fault symptom query and receiving a reply until said one of the potential responses indicates one of the resolution points, wherein if said one of the potential responses indicates one of the decision points then said one of the, decision points is designated as the next decision point (**Skaaning**: C35, L5-36; Fig. 12; the process iterates until a solution is found. Asking questions designate another decision point); and

in response to the reply including a request to view all of the resolution points:

transmitting diagnostic images associated with each of the resolution points in the decision tree to the user access device, thereby allowing a user to diagnose a fault without having to respond to queries for traversing the decision tree (These limitations

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are not considered since only one of the alternatives needs to be considered when applying prior art).

Skaaning does not teaches each said fault symptom query includes potential responses and images that correspond to the potential responses, one of said fault symptom queries being determining a type of defect, said images corresponding to said potential responses including a rim defect image and a resist plug defect image; and transmitting the fault diagnosis corresponding to said one of the resolution points to the user access device, said fault diagnosis including said type of defect.

Buenzali teaches each said fault symptom query includes potential responses and images that correspond to the potential responses, one of said fault symptom queries being determining a type of defect, said images corresponding to said potential responses including a rim defect image and a resist plug defect image (**Buenzli**: abstract, L15-24; C8, L48-61; C9, L55-67; C22, L44-68, C23, 1-27; C23, L61-66; Figs. 8 and 11a-11d; by troubleshooting a circuit, queries are being made to locate the fault. A schematic of the block being tested will show the components in that block) and transmitting the fault diagnosis corresponding to said one of the resolution points to the user access device, said fault diagnosis including said type of defect (**Buenzli**: C22, L44-68, C23, 1-27; the defect is transmitted to the system response window).

It would have been obvious to one of ordinary skill in the arts at the time of the applicant's invention to modify the teachings of Skaaning by making each fault symptom query includes potential responses and images that correspond to the potential responses, one of said fault symptom queries being determining a type of defect, said

images corresponding to said potential responses including a rim defect image and a resist plug defect image and transmitting the fault diagnosis corresponding to said one of the resolution points to the user access device, said fault diagnosis including said type of defect as taught by Buenzli for the purpose providing the user with a graphical representation of the system and the location of the fault so that isolation or correction of the fault can be made easier to the user.

Claim 36

Skaaning teaches transmitting a recommended remedial action based on the fault diagnosis to the user access device (**Skaaning**: C5, L5-16; C8, L1-16; C8, 26-31; C35, L5-36, Fig. 12).

Response to Applicant's arguments

10. The Applicant's arguments regarding the rejections under 35 USC 102(e) and 35 USC 103 have been fully considered but are not persuasive.

In reference to Applicant's arguments:

Skaaning does not disclose at least the element "transmitting diagnostic images associated with each of the resolution points in the decision tree to the user access device, thereby allowing a user to diagnose a fault without having to respond to queries for traversing the decision tree", as recited in amended Claim 15. Accordingly, Skaaning does not anticipate Claim 15 because it fails to disclose each and every element of Claim 15. Claims 16-25 depend from Claim 15, and thus are believed to be allowable at least due to their dependency on Claim 15.

Claim 28 as amended includes the element "transmitting diagnostic images associated with each of the resolution points in the decision tree to the user access device, thereby allowing a user to diagnose a fault without having to respond to queries for traversing the decision tree", and thus is patentable over Skaaning for at least the reasons given above for Claim 15. Claims 29-33 depend from Claim 28, and thus are believed to be allowable at least due to their dependency on Claim 28.

Claim 34 as amended includes the element "transmitting diagnostic images associated with each of the resolution points in the decision tree to the user access device, thereby allowing a user to diagnose a fault without having to respond to queries

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for traversing the decision tree", and thus is patentable over Skaaning for at least the reasons given above for Claim 15.

Examiner's response:

As stated in the rejection of claims 15, 28 and 35, these limitations have not been considered by the Examiner for applying prior art since the claim makes it optional to receive a reply including one of the potential responses or including a request to view all of the resolution points (as interpreted by the Examiner). Therefore, the prior art applied only needs to teach one of these two options. The prior art applied teaches the case where the reply includes one of the resolution points. The limitations cited by the Applicant apply for the case when the reply includes a request to view all of the resolution points. For purposes of the rejection, the prior art does not have to teach these limitations since the other alternative has been considered.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kekic et al. US Patent #6,788,315

Limon et al. US Patent #6,453,435

Faigon et al. US Patent #6,006,016

12. Claims 15-36 are rejected.

Correspondence Information

13. Any inquires concerning this communication or earlier communications from the examiner should be directed to Omar F. Fernández Rivas, who may be reached

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Monday through Friday, between 8:00 a.m. and 5:00 p.m. EST. or via telephone at (571) 272-2589 or email omar.fernandezrivas@uspto.gov.

If you need to send an Official facsimile transmission, please send it to (571) 273-8300.

If attempts to reach the examiner are unsuccessful the Examiner's Supervisor, David Vincent, may be reached at (571) 272-3080.

Hand-delivered responses should be delivered to the Receptionist @ (Customer Service Window Randolph Building 401 Dulany Street Alexandria, VA 22313), located on the first floor of the south side of the Randolph Building.

Omar F. Fernández Rivas
Patent Examiner
Artificial Intelligence Art Unit 2129
United States Department of Commerce
Patent & Trademark Office

Tuesday, April 10, 2007

ofR

[Signature]
JOSEPH P HIRL
PRIMARY EXAMINER
TECHNOLOGY CENTER 2100